

Claims

1. An authorisation system for permitting apparatus functional under the control of an operator to function normally only in the presence of an authorised user, comprising complementary parts of wireless communication means arranged to be carried in operation by the apparatus and an authorised user of the apparatus and operable to effect, within a spatial envelope defining a predetermined permissible working relationship between the authorised user and the apparatus, a communication link defined by continual transfer with reference to a temporal envelope of identifying information pairing the authorised user and the apparatus, said communication means being responsive to existence of said link to effect authorisation of the apparatus permitting it to function normally under said operator control and to cessation of an existing link to functioning apparatus to inhibit normal functioning of the apparatus after a delaying interval representative of extended absence of the authorised user from the apparatus.
2. An authorisation system as claimed in claim 1 adapted for use with moveable apparatus susceptible to being taken from the possession of the authorised user whilst functioning, in which the apparatus or the communication means includes means for measuring distance travelled and the communication means is operable to effect the delaying interval as a function of distance travelled by the apparatus.
3. An authorisation system as claimed in claim 2 in which the in which the means for measuring distance comprises acceleration responsive means carried by the apparatus or the communication means responsive to movement of the apparatus or communication means to effect a determination of distance travelled by the apparatus at least during the delaying interval.
4. An authorisation system as claimed in claim 3 for use with moveable apparatus capable of being carried by, and susceptible of being taken from the possession of the authorised user, wherein the acceleration responsive means comprises pedometer mans operable to recognise movement steps of the carrier of the apparatus and to compute

from a number of recognised steps at least an approximate distance travelled by the apparatus.

5. An authorisation system as claimed in claim 4 in which the pedometer means includes calibration means arranged to calibrate the pedometer to the stride pattern of the authorised user and the apparatus includes means to provide to the authorised user on demand distance travelled by apparatus carried by the authorised user during normal functioning of the apparatus.
6. An authorisation system as claimed in claim 1 adapted for use with moveable apparatus susceptible to being taken from the possession of the authorised user whilst functioning, in which the apparatus or the communication means includes means for measuring speed of the apparatus and at least one of the time and distance of travel of the apparatus and the communication means is operable to effect the delaying interval as a function of said speed and at least one of said time and distance of travel of the apparatus during the delaying interval.
7. An authorisation system as claimed in claim 1 in which the apparatus or the communication means includes timing means and the communication means is operable to effect the delaying interval as a time delay.
8. An authorisation system as claimed in claim any one of the preceding claims adapted for permitting use of apparatus comprising a vehicle having an occupants cab and an engine, and normal function of the engine by an operator who is an occupant and driver characterised in that the spatial envelope is defined to be substantially co-extensive with the occupants cab and the apparatus part is arranged to form a communication link with a user part carried by an occupant of the cab and to be operably coupled to the vehicle to authorise or inhibit functioning of the vehicle engine by the driver.

9. An authorisation system as claimed in any one of the preceding claims adapted for permitting use of apparatus comprising a vehicle characterised in that the apparatus or the communication means is arranged to be operably coupled to the vehicle to authorise the vehicle to travel at any speed demanded by the driver or to inhibit the vehicle from travelling in excess of a speed set by the system at the end of the delaying interval.
10. An authorisation system as claimed in claim 9 in which the apparatus or communication means part includes means for deriving a speed function related to any speed achieved during the delaying interval and at the end of the delaying interval to inhibit the vehicle from exceeding a speed that is a fraction of any speed represented by said speed function.
11. An authorisation system as claimed in any one of the preceding claims adapted for permitting use of apparatus comprising a vehicle having its engine supplied with fuel by way of a fuel delivery system and the apparatus part of the system is arranged to be operably coupled to the vehicle to authorise or inhibit delivery of fuel to the engine and to effect said inhibition of normal functioning after a said delaying interval by progressively reducing the delivery of fuel to the engine during said interval.
12. An authorisation system as claimed in any one of the preceding claims in which the apparatus part is operable in the delaying interval to effect temporary or permanent inhibition of multiple functional aspects of the apparatus during said delaying interval to disguise responsibility of any particular functional aspect for non-functioning of the apparatus.
13. An authorisation system as claimed in any one of the preceding claims adapted for use with apparatus in which operation of the apparatus is initiated by the operator prior to effecting control of functioning thereof, characterised in that the apparatus part is

responsive to initiation of operation of the apparatus by the operator to initiate establishment of the communication link prior to, or contemporaneously with, functioning of the apparatus.

14. An authorisation system as claimed in any one of the preceding claims in which the communication means comprises user transmission means carried by the user part and apparatus reception means carried by the apparatus part, having therein means to produce an identity reference unique to the pair, the user transmission means being operable to transmit radiation modulated in accordance with said identity reference and the apparatus reception means being responsive to receipt of said modulated radiation to confirm by transfer of identifying information including said identity reference existence of a communication link between them.
15. An authorisation system as claimed in claim 14 in which the communication means further comprises apparatus transmission means in the apparatus part and user reception means in the user part arranged to effect bi-directional communications between the apparatus part and the user part and the user and apparatus parts each have therein means to produce a further identity reference unique to the pair, the apparatus transmission means being operable to transmit radiation modulated in accordance with said further identity reference and the user reception means being responsive to receipt of said modulated radiation to confirm existence of a communication link between them.
16. An authorisation system as claimed in claim 14 in which said modulation is in accordance with a rolling digital code changed for each transmission.
17. An authorisation system as claimed in any one on claims 14 to 16 in which said modulation of the transmitted radiation is in accordance with a digital code and in which the communication means is arranged to change at least the carrier frequency of the modulated radiation in accordance with a digital code during communication.

-34-

18. An authorisation system as claimed in claim 17 in which the communication means is arranged to effect a communication link in accordance with the Bluetooth wireless specification.
19. An authorisation system as claimed in any one of claims 14 to 18 in which at least the identity reference is based upon generation of at least one random or pseudo-random number.
20. An authorisation system as claimed in any one of the preceding claims in which the temporal envelope comprises at each of sequential communication intervals a time window of predetermined duration, the apparatus part being responsive to receipt of identifying information from the user part within each time window to provide authorisation of the apparatus until the next window and responsive to absence of identifying information to determine cessation of the communication link.
21. An authorisation system as claimed in claim 20 in which the apparatus part is responsive to the absence of receipt of identifying information within a predetermined number of consecutive time windows to determine cessation of the communication link.
22. An authorisation system as claimed in claim 20 or claim 21 in which the sequential communication intervals are contiguous.
23. An authorisation system as claimed in any one of the preceding claims in which the communication means includes a relay part arranged to be disposed, in respect of the communication link, between the user part and apparatus part and wherein at least the user part is arranged to transfer identifying information by way of the relay part in preference to establishing a communication link with the apparatus part directly.
24. An authorisation system as claimed in claim 23 in which the communication means is arranged to attempt to establish a communication link including the relay part and in absence thereof to establish a communication like directly between the user part and

the apparatus part.

25. An authorisation system as claimed in claim 23 or claim 24 in which the relay part is arranged to be carried by the user in operation.
26. An authorisation system as claimed in any one of claims 23 to 25 in which the relay part includes additional functional apparatus under the control of the authorised user and the relay part is arranged to effect in response to cessation of an existing communication link with the user part of the communication means during functioning of the additional apparatus inhibition of normal functioning after a delaying interval.
27. An authorisation system as claimed in any one of the preceding claims in which the user part comprises a plurality of physically discrete modules consisting of a master module operable to effect a said communication link with the apparatus part and at least one supplementary module operable to effect a communication link with the master module, each said supplementary module having associated therewith a specific functional feature of the functioning apparatus, said communication means being responsive to absence of a communication link between a said supplementary module and master module to inhibit function of said feature within the functioning apparatus.
28. An authorisation system as claimed in any one of the preceding claims in which the user part comprises a plurality of physically discrete modules consisting of a master module operable to effect a said communication link with the apparatus part and at least one supplementary module operable to effect a supplementary communication link with the apparatus part, each said supplementary module having associated therewith a specific supplementary functional feature of the functioning apparatus not critical to its normal functioning, said communication means being responsive to absence of a communication link between a said supplementary module and the apparatus part to inhibit operation of the associated supplementary functional feature.
29. An authorisation system as claimed in any one of the preceding claims in which the apparatus part of the communication means is arranged to be removably carried by the

-36-

apparatus in functioning and includes apparatus operation initiation means operable to permit initial operation of the apparatus.

30. An authorisation system as claimed in any one of the preceding claims for apparatus having a telephone communication ability, in which the apparatus part is operable during said delaying interval to effect a telephone call to a predetermined recipient.